

found Room in this Plate to have inserted an O you should have seen that the letters were not more distinct then the points of Distinction, nor a drawn circle more exactly so, then we have now shown a point to be a point.

Observ. II. Of the Edge of a Razor.

Schem. 2.
Fig. 2.

THe sharpest Edge hath the same kind of affinity to the sharpest Point in Physicks, as a line hath to a point in Mathematicks; and therefore the Treaty concerning this, may very properly be annexed to the former. A Razor doth appear to be a Body of a very neat and curious aspect, till more closely viewed by the Microscope, and there we may observe its very Edge to be of all kind of shapes, except what it should be. For examining that of a very sharp one, I could not find that any part of it had any thing of sharpness in it; but it appear'd a rough surface of a very considerable breadth from side to side, the narrowest part not seeming thinner then the back of a pretty thick Knife. Nor is't likely that it should appear any otherwise, since as we just now shew'd that a point appear'd a circle, 'tis rational a line should be a parallelogram.

Now for the drawing this second Figure (which represents a part of the Edge about half a quarter of an inch long of a Razor well set) I so plac'd it between the Object-glass & the light, that there appear'd a reflection from the very Edge, represented by the white line *abcdef*. In which you may perceive it to be somewhat sharper then elsewhere about *d*, to be indented or pitted about *b*, to be broader and thicker about *c*, and unequal and rugged about *e*, and pretty even between *ab* and *ef*. Nor was that part of the Edge *ghik* so smooth as one would imagine so smooth bodies as a Hone and Oyl should leave it; for besides those multitudes of scratches, which appear to have raz'd the surface *ghik*, and to cross each other every way which are not half of them express'd in the Figure, there were several great and deep scratches, or furrows, such as *gb* and *ik*, which made the surface yet more rugged, caus'd perhaps by some small Dust casually falling on the Hone, or some harder or more flinty part of the Hone it self. The other part of the Razor *ll*, which is polish'd on a grinding-stone, appear'd much rougher then the other, looking almost like a plow'd field, with many parallels, ridges, and furrows, and a cloddy, as 'twere, or an uneven surface: nor shall we wonder at the roughnesses of those surfaces, since even in the most curious wrought Glasses for Microscopes, and other Optical uses, I have, when the Sun has shone well on them, discover'd their surface to be variously raz'd or scratched, and to consist of an infinite of small broken surfaces, which reflect the light of very various and differing colours. And indeed it seems impossible by Art to cut the surface of any hard and brittle body smooth, since Putte, or even the most curious Powder that can be made use of, to polish such a body, must consist of little hard rough particles, and each of them must cut its way, and consequently leave some kind of gutter or furrows

furrow behind it. And though Nature does seem to do it very readily in all kinds of fluid bodies, yet perhaps future observators may discover even these also rugged; it being very probable, as I elsewhere shew, that fluid bodies are made up of small solid particles variously and strongly mov'd, and may find reason to think there is scarce a surface in *rerum natura* perfectly smooth. The black spot *mn*, I ghes to be some small speck of rust, for that I have oft observ'd to be the manner of the working of Corrosive Juyces. To conclude, this Edge and piece of a Razor, if it had been really such as it appear'd through the Microscope, would scarcely have serv'd to cleave wood, much less to have cut off the hair of beards, unless it were after the manner that Lucian merrily relates Charon to have made use of, when with a Carpenters Axe he chop'd off the beard of a sage Philosopher, whose gravity he very cautiously fear'd would indanger the oversetting of his Wherry.

Observ. III. Of fine Lawn, or Linnen Cloth.

THis is another product of Art, A piece of the finest Lawn I was able to get, so curious that the threads were scarce discernable by the naked eye, and yet through an ordinary Microscope you may perceive what a goodly piece of coarse Matting it is; what proportionable cords each of its threads are, being not unlike, both in shape and size, the bigger and coarser kind of single Rope-yarn, wherewith they usually make Cables. That which makes the Lawn so transparent, is by the Microscope, nay by the naked eye, if attentively viewed, plainly enough evidenced to be the multitude of square holes which are left between the threads, appearing to have much more hole in respect of the intercurrent parts then is for the most part left in a lattice-window, which it does a little resemble, onely the crossing parts are round and not flat.

These threads that compose this fine contexture, though they are as small as those that constitute the finer sorts of Silks, have notwithstanding nothing of their glossie, pleasant, and lively reflection. Nay, I have been informed both by the Inventor himself, and several other eye-witnesses, that though the flax, out of which it is made, has been (by a singular art, of that excellent Person, and Noble Vertuoso, M. Charles Howard, brother to the Duke of Norfolk) so curiously dress'd and prepar'd, as to appear both to the eye and the touch, full as fine and as glossie, and to receive all kinds of colours, as well as Sleeve-Silk; yet when this Silken Flax is twisted into threads, it quite loseth its former luster, and becomes as plain and base a thread to look on, as one of the same bigness, made of common Flax.

The reason of which odd Phenomenon seems no other then this; that though the curiously dress'd Flax has its parts so exceedingly small, as to equallize, if not to be much smaller then the clew of the Silk-worm, especially in thinness, yet the differences between the figures of the constituting filaments are so great, and their substances so various, that whereas those

Schem. 15.
Fig. 3.